Not Interspinous, but Interlaminar, Not Decompression Device, but Overload Assistance Device: INTRASpine, a Posterior Motion Preservation Device in Lumbar DDD; Biomechanichs, Indications and Clinical Results (up to 2 Years Follow up)  
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Purpose of the study: All interspinous systems presently available create, even if in different degrees, a significant reduction of the flexion-extension and, in minor measures, of the bending and axial rotation.

Materials and methods: We present the results of the biomechanical tests in regards to the use of a new device for interlaminar assistance in the degenerative pathologies of mobile lumbar segments. The device, made of medical silicone (65 shore) with a polyethylene terephthalate coating, has an advantage with respect to other similar interspinous devices, which is that it may be implanted more anteriorly (interlaminar) and therefore as close as possible to the center of instantaneous rotation of the segment. Furthermore, with this device, it is possible to restore the physiological lumbar lordosis, also thanks to the augmentation of the supraspinous fibrous complex by means of a robust artificial ligament that is passed around the two adjacent spinous processes.

The indications are:
- Chronic low back pain in black disk with facet-syndrome (pre-operative evaluation with dynamic X-rays and block tests of the facet joints)
- Soft and/or dynamic and foraminal stenosis
- After operations for big expelled disc hernias in young patients so as to prevent the collapse of the disc and the subsequent CLBP.
- Insufficiency of the supra-spinal fibrous complex
- Topping of
- After operation for synovial cyst.

Results: The biomechanical tests about the ROM and the clinical results of the italian prospective multicenter clinical study (up to 2 year follow-up) seem promising. The results was collected by two independent neurologist by telephone interview. Group A (Chronic low back pain in black disk with facet-syndrome): 27 patients, mean age 44.2 years, 14 females and 13 males, 23 implanted at one level and 4 at two levels. Mean VAS pre-op: 8, at 3 months 1.8, at 2 years 0.9. Mean ODI pre-op: 35.2 at 3 months 15.4, at 2 years 12. 2 patients need a second surgery after 6 and 10 months and 1 patient with poor results don't want, at moment, others surgical treatments. Group B (After operations for big expelled disc hernias in young patients): 29 patients, mean age 43.2 years, 18 males and 11 females. Mean VAS pre-op: 8.5, at 3 months 2.4, at 2 years 0.5. Mean ODI pre-op: 40.4, at 3 months 15.3, at 2 years 11.5. No further surgical procedure at moment in this group. Group C (Soft Stenosis without decompression): 14 patients, mean age 51.6 years, 9 females and 5 males, 11 at 1 level and 3 at 2 levels. Mean VAS pre-op: 7.9, at 3 months 2.4, at 2 years 1.1. Mean ODI pre-op: 36.2, at 3 months 15.8, at 2 years 11.4. 1 patient need a second surgery after 9 months.

Conclusions: The results of the study (not randomized) definitely appear to be satisfying, although if the number is not high. We nevertheless feel we should recommend the use of this device after failure of conservative treatment, as a first choice over more invasive surgical operations and especially in the first phase of degenerative cascade in order to slow down its natural evolution.